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Policy

The U.S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, sus-

ceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda, Maryland 20014, giving full name, rank, corps, and old and new addresses.

FRONT COVER: Another view of the U.S. Naval Hospital, San Diego, California, showing the main Administration Building in the center, Building 2 on the left and Building 5 on the right—only a small portion of this great hospital complex (see cover and inside front cover legend of Vol 44, No. 10, Med News Ltr of 27 Nov 1964).

The training received by a typical intern at this hospital during a recent year, showed that he delivered 188 obstetrical cases, performed 132 and assisted at 93 surgical operations, administered 91 general and spinal anesthetics, and attended 40 autopsies.

Residency programs in the specialties of Anesthesiology, Cardiovascular Disease, Dermatology, Medicine, Obstetrics and Gynecology, Ophthalmology, Otolaryngology, Pathology, Pediatrics, Radiology, Surgery, Thoracic Surgery, and Urology are conducted at this hospital.

(Photo submitted by Mr. John Stringer, Head of the Medical Photography Laboratory, U.S. Naval Medical School, NNMC, Bethesda, Md. 20014)—Editor

The issuance of this publication approved by the Secretary of the Navy on 4 May 1964.

U.S. NAVY MEDICAL NEWS LETTER

Hemodialysis in the Management of Acute Renal Failure*

CAPT Paul D. Doolan MC USN, Director, Clinical Investigation Department, U. S. Naval Medical Research Institute, Bethesda, Md.

Hemodialysis effectively removes retained metabolites, corrects acid base imbalances, cures potassium intoxication, and with appropriate modifications, quickly relieves the burden imposed by overhydration.¹ In short, artificial kidneys save lives and represent one of the most important therapeutic advances of our time. All this being so, hemodialysis is but a component in the total care of the patient, and as such, must be considered within the full context of the problem. The problem at hand is most challenging for all of us who wear the uniform, for our mandate is to heal the most desperately injured under less than optimum circumstances.

The bias contained in the following comments lies in the direction of insisting on a level of medical support some may think unrealistic in a theater of war. It is folly to quibble about dialytic techniques if no survivors arrive due to inadequate supplies of blood, a rapidly changing front or enemy control of the air. This is true but one must still decide on what is needed before anything else including compromises can be discussed. Adequate treatment of posttraumatic renal failure demands, for example, a minimum of professional and technical capabilities embodied in the form of a renal center. If such a renal center cannot be provided then the plight of the majority of these patients is hopeless and it matters little whether they are attended by medical officers or actuaries.

The clinical expression of acute renal insufficiency is a function of three main forces; the nature of the precipitating cause, the intensity of the catabolic response; and the duration of the oliguria. Let the point be emphasized that in addition to these forces and some technical capabilities, successful management rests mainly on a series of correct judgment decisions. These decisions begin with the resuscitative effort, for the patient's clinical course and ultimate fate are frequently decided at this early stage. Has all the devitalized tissue been removed, should the leg be amputated, has hemo-

stasis been achieved, what complications are peculiar to the specific tissue damaged and how are all these considerations influenced by the possible development of acute renal failure? These are the types of judgment decisions that must be made and they clearly indicate the nature of the nephrologist's dependence on his surgical colleagues. Their joint interest extends beyond these urgent matters for there is reason to believe that both the incidence of renal shutdown and the magnitude of the catabolic response are related to the degree and extent of tissue damage.² Less work has been devoted to the problem of the influence of uremia on the overall surgical response but certainly a cycle exists between initial and derivative forces. The summons to an integrated and sustained medico-surgical effort is clear.

In so far as the renal failure is concerned the goal must be to keep the patient as near normal as possible. This means instituting dialysis therapy very soon after the diagnosis has been established, using whatever technique is best suited for the particular patient. Further, it commits one to the policy of frequent to semi-continuous therapy. Such intensive therapy has been made possible by the advent of silastic teflon blood-vessel cannulae which have a high reliability; the need for recannulation being something in the order of every sixth patient because of troubles on the venous end.³ A number of different dialyzers may be used. The two-layer Kiil dialyzer offers the advantage of requiring no more than 500 ml of priming blood, flow rates of up to 200 ml per minute are possible without a pump, it can be quickly assembled and the incidence of leaks during operation is extremely low.^{3,4} The 350 liters of dialyzing solution required for a single day presents somewhat of a problem in that space is always at a premium and the refrigeration required represents an added encumbrance. The handling of the dialysate, cooled or warmed, recirculated or single pass is, however, an area under active investigation and one in which adaptations and compromises may be made to suit particular circumstances.⁵ Nonetheless, the overriding advantage of this technique is that adequate

* From Bureau of Medicine and Surgery, Navy Department, Research Task No. MR 005.12-1600.01. Presented before the Section on Military Medicine of the American Medical Association Meeting in San Francisco, California on 21-25 June 1964.

therapy can be provided as a nursing procedure, thus enabling medical officers to attend to the myriad of other important clinical problems. We are, of course, indebted to the Seattle group for much of the progress in this area.^{3,6,7,8}

Why go to these extremes and what evidence is there that it does any good? Mortality in posttraumatic renal failure is in excess of 60% when the patients are treated by specialists using modern techniques according to accepted criteria.⁹ The mortality is still higher in patients treated less completely. These poor survival rates are reason enough for further effort. No student of this problem has to my knowledge suggested that dialysis be used less frequently; rather the trend has been toward earlier and more frequent treatment. Teschan, in 1960, clearly analyzed the problem and enunciated the important concept of prophylactic hemodialysis.⁹ The rationale, as I understand this concept, is that patients with posttraumatic renal failure are prone to develop anemia, infections, myositis, impaired wound healing and a dreadful wasting that cannot be treated but may be prevented by intensive dialysis therapy. This hypothesis ignores mechanisms but it enjoys the testimony of common sense and deserves testing. A sampling of the experience to date reveals that most investigators are encouraged. Mulinari and Hegstrom in Seattle³ and Parsons in Leeds¹⁰ report mortality rates of 25 and 40 percent respectively which represent significant reductions in the post-traumatic group. Dr. Alwall in Lund¹¹ who has a very large experience with posttraumatic renal failure treated with both conventional and intensive dialysis, reports, however, that mortality remains high and Easterling and Forland report that in the expanded experience at Brooke Army Medical Center the mortality was 64 percent.¹² These statistics are given because someone always asks for them and so they can now be used to serve either positive or negative prejudices. One need not enlarge on the difficulties inherent in any attempt at a meaningful statistical treatment of a multivariable continuum for which it may be impossible to obtain control groups and in which the data are compiled by investigators with differing systematic biases but no pre-agreed upon definitions. What is more impressive is that the aforementioned investigators as well as Drs. Brun in Copenhagen¹³ and Shaldon in London¹³ are unanimous in the opinion that intensive dialysis therapy unquestionably improves the well-being of the patient and facilitates overall management. This is a significant advance, since the possibilities with an alert and cooperative patient are much better than with one who is obtunded, agitated or depressed. With pulmonary complications being a major cause of death, the desirability of having a patient who can comply with the pulmonary prophylaxis routine is obvious. Other things being equal, these patients can be ambulated more which restores or maintains vascular tone, decreases the negative nitrogen

balance, and prevents phlebothrombosis and decubiti. Finally, a certain percentage of these patients are able to take a diet containing 30-50 gms of protein and several thousand calories. Beyond the value this has in preventing the distressing oral lesions which occur in a fair percentage of these patients, I am persuaded to believe that protein intake may have a salubrious effect of a more fundamental nature. Heretofore, most students of acute renal failure have felt that the catabolic response represented the wisdom of some higher authority, and since it could not be altered it had best never be tampered with. This case rests on the results of nitrogen balance studies which tell one something about a net effect and nothing about the thousands of component reactions. Must the influence of protein intake on say RNA turnover in the liver be qualitatively the same as on muscle protein? Is it not probable that the catabolic response may merge into a vicious cycle wherein deficient protein synthesis perpetuates continued catabolism? Prophylactic dialysis in allowing patients to eat earlier may enable us to break or prevent this cycle. By offering food and disposal facilities simultaneously we continue to render homage to nature and at worst, our error will be one of inefficiency.

In conclusion, let me state that the indications for hemodialysis are largely a function of the skill and facility with which the procedure can be accomplished. The advent of chronic vessel cannulation and passive flow low volume dialyzers extend new hope to the patients with posttraumatic renal failure, for now they can be protected rather than rescued at the brink.

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Current Blood Banking Operations

LCDR R. W. Poley MC USN. From the Proceedings of the Monthly Staff Conferences of the U. S. Naval Hospital, NNMCMC, Bethesda, Maryland 1963-1964.*

We would like to present a brief status report on the activities of the Blood Bank—a report to our consumers. First, we would like to answer the question: “Where is the blood obtained?” The first slide shows that we had a total of 5,945 donors in 1963; of these, 5,454 were accepted and drawn. The remaining 491 were rejected for a wide variety of reasons, including history of jaundice, elevated temperature or hemoglobin level below 12.5 Gm%. Approximately 75 percent of our donors are military, while the remainder are civilians, usually military dependents or government employees. The civilian group tends to have a higher number of repeat donors as they are permanent residents of the area. Many of these people are members of the Gallon Club, having donated more than eight units.

Three-quarters of all the blood is obtained on “mobile donor runs.” A team consisting of a medical officer, a nurse, and five corpsmen travels to these outlying activities twice a week. It is quite apparent that donor procurement relies heavily on the zeal of the local representatives attached to the contributing commands. The donor program is aided by the fact that credits are given to donors for their contributions which can be redeemed when they or their dependents require blood. This is a valuable inducement among civilian donors.

The Donor Center prefers to keep National Naval Medical Center personnel available as walking donors, an immediately accessible pool of fresh blood. The demands placed on these standby donors are more inconvenient to the individual than the regular donor. The cooperation of the Wards and Departments of the Center is required to support the enormous blood needs of cardiac surgery.

The Blood Bank obtains units from the American Red Cross when the less common blood groups are in

short supply. A total of 1,023 units were provided by the American Red Cross last year.

The second question we would like to answer is: “How is the blood used?” The following chart depicts how the blood is utilized:

UTILIZATION OF BLOOD

Transfused at USNH, Bethesda	3,107
Shipped to other activities	1,450
Salvaged plasma	1,920
TOTAL	6,477

Of the 6,477 units received in the Blood Bank, 3,107 are actually transfused into patients at this hospital. Another 1,450 are supplied to other government hospitals and the American Red Cross. Most of the blood needs of the Naval Hospitals at Quantico, Annapolis, and Patuxent River are supplied by this Blood Bank. Walter Reed Army Hospital, the Clinical Center of the National Institutes of Health, and the American Red Cross act as a clearing house for the emergency requirements of civilian institutions in the area. Blood that exceeds the 21-day shelf-life at 4° Centigrade is salvaged as plasma and plasma products. In 1963, 1,920 units were converted to stored plasma or were turned over to pharmaceutical companies for credit. The laboratory received products worth \$1,872 in return.

Less than half of the units cross-matched are transfused into patients at this hospital. About 63 percent of all cross-matched units are released after 72 hours. Many units are cross-matched several times during their 21-day life. More frequent use of the “group-type and hold” procedure as backup to multiple unit transfusions would reduce the number of cross-matches and conserve expensive sera.

In addition to the usual ACD whole blood, packed red cells, frozen plasma, stored plasma, and pediatric units are provided on request. Fresh whole blood can be obtained from local donors for the treatment

* At the time of this presentation, Dr. Poley was a Senior Resident in Pathology at the U.S. Naval Medical School, NNMCMC, Bethesda, Md. He is now stationed at the U.S. Naval Hospital, Jacksonville, Fla., where he serves as a Staff Member of the Pathology Service.

of thrombocytopenia within 2 to 3 hours. The yield of platelets per unit is far greater when given as whole blood in contrast to concentrates. To be effective, platelet concentrates must be prepared from many units of fresh whole blood.

The third question we would like to answer is: "What are the complications encountered by the transfusion service?" During 1963, about 2 percent of all transfusions resulted in detectable clinical reactions. Only one reaction was definitely proved to be hemolytic. Fortunately, this antigen-antibody incompatibility resulted in minimal red cell destruction and produced a slight transient symptom that almost went unnoticed. The last fatal transfusion reaction at U.S. Naval Hospital, Bethesda, Md., occurred many years ago. It is possible that this death was the result of bacterial contamination of the unit. The insidious, cold-growing, gram-negative organism produced no visible change in the supernatant plasma; the unit was given to the patient who expired in a matter of hours.

The possibility of hemolytic transfusion reaction lurks in every transfusion ordered. Although Ward and Blood Bank personnel may become impatient with the seemingly rigid procedures, these are the patient's greatest safeguard. The system has built into it "fail-safe" mechanisms just as the Polaris missile has.

The titration laboratory plays an essential role in preventing dangerous hemolytic reactions. Patients scheduled to receive multiple transfusions are exhaustively studied in order to detect potential sensitizing antigens. Troublesome units can then be eliminated.

The great bulk of the work (about 70 percent) however, deals with the routine screening of obstetrical patients. All mothers are Rh-typed and screened for the presence of immune antibodies which could cause fetal erythroblastosis. Patients who are found to be Rh-negative are worked up further and periodic antibody titers are obtained during pregnancy.

Although most transfusion reactions are allergic or pyrogenic in nature, ward personnel should carefully observe patients being transfused. This is particularly important during the administration of the first 100 cc, since potentially fatal massive hemolysis can be prevented by discontinuing the transfusion at the first adverse sign. It is advisable to order the recording of vital signs during this crucial interval. This will assure that the patient is closely watched.

When a transfusion is discontinued due to a reaction, the Blood Bank officer or the OOD of the Naval Medical School should be notified immediately. Blood Bank personnel will then evaluate the patient in order to determine the following:

1. What caused the reaction, and
2. If the reaction was hemolytic, how severe was it and what antigen-antibody system was responsible.

The following chart outlines our workup of a transfusion reaction:

EVALUATION OF A TRANSFUSION REACTION

1. History and Physical examination
2. Urine for free hemoglobin
3. Plasma for free hemoglobin
4. Serum for haptoglobin, methemalbumin, and bilirubin
5. Blood for titration laboratory
 - a. Direct Coombs
 - b. Other immunohematology studies to determine the source of reaction.
6. The discontinued unit of blood
 - a. Tests for compatibility
 - b. Culture
 - c. Supernatant hemoglobin
7. Follow-up studies
 - a. Urinary output
 - b. Others as indicated

The other significant complications of transfusion is serum hepatitis. The carrier rate among donors has been given as 1 in 200, while the incidence of hepatitis has been reported as ranging from 1 to 7 percent. The incidence varies considerably with the type of donor population available and with the average number of units given each patient. Professional donors and open-heart-pump patients tend to push this figure upward.

When we investigated all recorded cases of serum hepatitis at this hospital in the last five years we found a total of nine. Two of these were infected during an influenza immunization program on a ship. Of the remaining seven, three resulted from single unit transfusions. These included a 71 year-old female who received one unit during a hip pinning operation, an 18-year-old male who received one unit during the resection of a parotid tumor, and an 18 year-old female who received one unit for blood loss due to a spontaneous abortion. Only the first of these cases resulted from blood given at this hospital.

The multiple transfusion cases of serum hepatitis consist of two patients with severe burns (one received 8 units, the other 4 units), an open-heart surgery patient (12 units), and an auto accident victim with a compound fracture of the angle (4 units). Three of the four received their blood at this hospital. There were no fatalities. So we have been able to find four cases of serum hepatitis that resulted from blood given at this hospital during the last five years. Additional cases attributable to our Blood Bank may have been treated at other medical facilities, however. This number is probably not high, since the entire Navy reported only 12 cases of serum hepatitis in 1962 and 8 cases in 1961. It is possible that these Bureau of

Medicine and Surgery figures may not represent the entire picture. Additional cases may be lost among 600 cases of infectious hepatitis from all causes reported annually.

In summary, the Donor Center of the U.S. Naval Medical School, NNMCM, has been able to meet its

increasing commitments for blood by going to the donor. The special needs for walking donors and fresh blood are met by the National Naval Medical Center base personnel. The incidence of hemolytic reactions and serum hepatitis is surprisingly low. The latter can be attributed to well-motivated volunteer donors.

FROM THE NOTE BOOK

REMINDER TO PROSPECTIVE MEDICAL OFFICER VOLUNTEERS FOR ANTARCTIC RESEARCH PROGRAM

The U.S. Navy has the annual task of supporting a long-range scientific operation in Antarctica which is under the auspices of the National Science Foundation. Plans are now being formulated for next year's operation which will be known as the U.S. Antarctic Research Expedition.

During the operation, the Navy will support five bases in Antarctica (Pole, Byrd, McMurdo Sound, Cape Hallett, and Eights Station) with a medical officer at each of the first four bases (Flight Surgeon at McMurdo Air Facility). Personnel at these bases will vary from 15 to 100 men, including 3 to 15 civilian scientists who will investigate not only earth sciences, such as weather, geology, seismology, and glaciology, but also the biological and medical sciences. Antarctic doctors are invited and encouraged during their tour of duty to study the medical problems of isolation, acclimatization, and cold weather physiology.

Special training for medical officers will begin in the spring or early summer of 1965 in orthopedics, general surgery, anesthesiology, EENT, psychiatry, emergency dental care, cold weather medicine, hygiene and sanitation, and survival in the polar regions.

In the fall of 1965, after training has been completed, the party will embark for Christchurch, New Zealand and then to Antarctica. Individuals will remain at their respective bases in Antarctica until November or December 1966 when they will return to the Continental United States for reassignment, usually to a duty station of their choice from among available billets. Assignment to this operation is available to qualified medical officers on active duty or inactive

duty. Further information concerning how you can volunteer can be obtained by contacting BuMed, Attn: Code 31.—Medical Corps Branch, Professional Div., BUMED.

RADIOISOTOPE TECHNIQUES AND NUCLEAR MEDICINE COURSE FOR MEDICAL OFFICERS

Class Number
Class #17

Inclusive Dates
1 March—23 April 1965

Commencing with the above class the schedule of the Radioisotope Techniques and Nuclear Medicine Course for Medical Officers has been changed to convene in March and September. The course is conducted at the U.S. Naval Medical School, National Naval Medical Center, Bethesda, Md. In view of the limited quota and shortage of travel funds for attendance at short courses, only those Medical Officers who require the course as an integral part of their residency training or as an important factor in the performance of their current assignment can be authorized to attend. Travel and per diem funds will be provided in accordance with budgetary limitations. Officers who cannot be provided with travel orders to attend at Navy expense may be issued Authorization Orders by their Commanding Officers following confirmation by this Bureau that space is available in each case.

Requests should be forwarded in accordance with BUMED INST. 1520.8A at least six weeks prior to commencement of the requested course.

The exact inclusive dates of Class #18, convening in September 1965 will be published at a later date.—Training Branch, Professional Div., BUMED.

IMPORTANT INFO FOR MSC OFFICERS

BuMed Instruction 1520.12B requires that ALL MSC officers (2300, 2302, 2305) who desire to be considered for assignment to duty under instruction at the Naval School of Hospital Administration, Bethesda, Md., must submit individual letter requests. Requests should contain a complete resume of academic background, including transcripts of courses completed, unless they have been previously furnished the Bureau, plus other requirements of the above instruction. Requests for the NSHA class convening in August 1965 must reach the Bureau prior to 1 January 1965.

MEDICAL SERVICE CORPS PERFORMANCE AND TRAINING

The primary mission of the Medical Service Corps is to support all phases of Medical Department operations. In order to render the best possible support, each officer must exert strong influence upon himself to improve his performance of duty and professional competence. Throughout his career the officer must continue to study and grow intellectually if his performance is to improve commensurate with increasing responsibilities resulting from promotion to higher grade.

In 1942 the need for developing officers in the field of hospital and medical department administration was recognized. Therefore, a Training Department was established at the U.S. Naval Hospital, National Naval Medical Center, Bethesda, Md., to meet this urgent need. In 1943 the Training Department was redesignated as the Hospital Corps Officers School, and in 1945 the present Naval School of Hospital Administration was established.

From 1942 to 1960 approximately 800 Hospital Corps and Medical Service Corps officers completed the course of instruction without receiving any academic credit for their achievement. However, the knowledge gained from that school has guided those officers in performing the most difficult administrative assignments within the Medical Service Corps.

On 5 August 1960, the Bureau of Medicine and Surgery authorized a cooperative program with the George Washington University, Washington, D.C., providing for the establishment of an off-campus center of the College of General Studies at the U.S. Naval School of Hospital Administration. Since that time, 142 Navy MSC officers have graduated from the 10 months course. Forty-three of this group have completed their baccalaureate degree and of this group, seven have also finished their Master's program. Seventy-four of the remaining ninety-nine officers are actively pursuing their degree by participating in part-time, off-duty courses of instruction. Thirty-five are working in their senior years while thirty-nine are participating on the junior level. These officers are to be commended for their foresightedness and dedication to this educational

endeavor which requires so much time and effort in addition to their regular duties.

It is encouraging to note the large percentage of MSC officers who are taking advantage of the credits earned at the Naval School of Hospital Administration by continuing their degree program. It is realized that there are many factors to be considered in participating in off-duty courses of instruction. However, efforts expended will undoubtedly pay great dividends in the future career development of the officers concerned. It is significant to note that all but 18% of the NSHA graduates since 1961 have found time to continue their academic program.

There are 152 MSC officers pursuing their education under BuMed sponsorship during the Fall Semester 1964. It is estimated that in addition to this number, approximately thirty officers are pursuing a degree program by other means.

The attention of all Medical Department officers is invited to the provisions of BuMed Instruction 1500.7A in regard to the financial assistance offered by BuMed in support of part-time, outservice training, and all officers are encouraged to continue their education which is so necessary to meet the challenges of changing concepts in all fields of professional endeavor. From: CAPT R. S. Herrmann MSC USN, Director, Medical Service Corps Division, BUMED.

ANNOUNCEMENT OF NEW PUBLICATION

Selection of Camera Filters for Color Photography, by C. S. McCamy, National Bureau of Standards Miscellaneous Publication 259; June 26, 1964; chart; 5 cents. (Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or from local U.S. Department of Commerce Field Offices.)

One of the most difficult problems facing a serious color photographer—whether he is a hobbyist or a scientist—is matching his color film to the light he is using to take the picture.

Color films are usually balanced for a particular kind of light classified as "daylight," "flash," "3200°K," or "photoflood." When a film is used in light of a different color, filters are used over the camera lens to bring the combination back into agreement. This chart provides a quick and easy method of selecting the light filter for almost any combination of light source and color film. To select the correct filter, the photographer simply lays a straightedge across the three scales so that it connects the points corresponding to the light source and the color film. The straightedge will then cross the center line at a point corresponding to the proper filter. NOTE: Foreign remittances must be in U.S. exchange and should include an additional one-fourth of the publication price to cover mailing costs. —From: U.S. Department of Commerce, National Bureau of Standards, October 1964.



DENTAL SECTION

SEMI-PERMANENT TREATMENT OF FRACTURED INCISORS

Dr. Norman H. Olsen, Northwestern University School of Dentistry. Practical Dental Monographs, September 1964, pages 24-27. Year Book Medical Publishers, Inc., Chicago, Ill.

A conservative method of restoring fractured young permanent incisors employs the use of wire pins in conjunction with a rapid setting resin. The wire pin is utilized to retain the self-curing resin. "It has been observed that most of the fractures of the Type III variety (coronal fracture with a considerable amount of dentin exposed, but no pulpal involvement) may be divided into two classifications. The first is a fracture involving only one angle—either the mesial or distal angle. The second is a horizontal type of fracture involving both

the mesial and distal angles of the tooth. The only preparation of the tooth in addition to placement of a wire for retention is removing any bevels resulting from the fracture. Retention holes for 23-gauge nichrome wire are made with a tapered 699 fissure bur. In the horizontal type of fracture, the retention holes are placed just inside the dento-enamel junction. The depth of these holes should be such that as much wire extends out of the tooth as extends within the tooth. (Fig. 1) In restoring an angle, the wire that extends along the

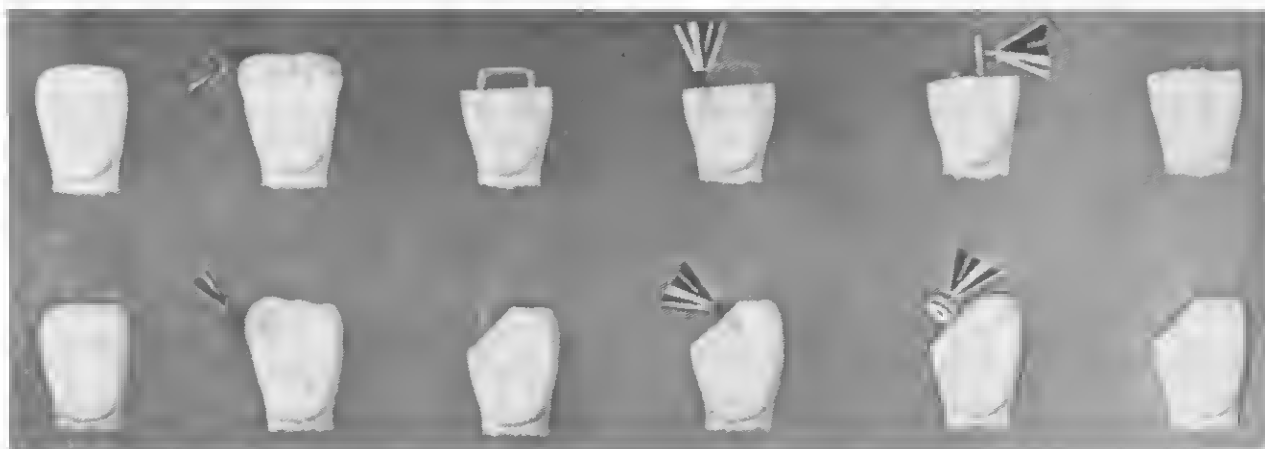


Fig. 1.—Mode of restoring both the angular and horizontal type of fracture with rapid-cure resin material using a wire pin for retention.

long axis of the tooth may extend as far into the tooth as it extends out of the tooth. However, the other end of the wire must be placed only to such a depth as to make the wire retentive. The 23-gauge nichrome wire is bent so that it has to be sprung into place and is retentive prior to its cementation. The wire is then cemented with zinc phosphate cement (not with resin material). The fractured portion can then be restored, utilizing the brush technic or using a resin form that has been adapted to the tooth. This mode of treatment provides an excellent esthetic result with a minimum amount of preparation of the tooth. The shortcoming of this treatment is that the color of the resin has to be modified from time to time.

88TH CONGRESS

Bulletin of the Council on Legislation, American Dental Association, No. 88-20, September-October 1964.

The 88th Congress, which adjourned on October 3, after being in session almost continually for 21 months, considered many matters of interest to the health professions.

The preeminent issue was, of course, the controversial legislation to include health care benefits under the social security system. In the waning days of the recently concluded Congress, a stalemate between House and Senate Conferees resulted in the shelving of a so-called "medicare" program along with cash benefit increases for social security pensioners.

Health Professions Educational Assistance Act—The first session of the 88th Congress also enacted a grant program to assist dental and medical education. Under this program, six dental schools already have received approval of grant applications totaling nearly \$17 million in fiscal 1965. Several of the schools will replace completely their teaching facilities while others will renovate and expand their existing facilities. To date, no applications for new dental schools have been approved, although reportedly, new schools are contemplated in Connecticut, Florida and South Carolina. Under the program, the federal government will contribute from 50 per cent to 66⅔ per cent of construction costs. Thirty-seven schools have indicated an intent to apply for funds under the construction phase of the program. The law also authorizes grants to schools to establish low-interest loan funds for needy

dental and medical students. In its first few months of operation, the educational assistance program is proving to be of great benefit to a number of dental schools which had not been able to raise sufficient funds to replace their obsolete and inadequate teaching facilities.

Military Pay and Draft Law—Congress extended until 1967, the so-called "doctor draft law" which authorizes the drafting of dentists and physicians into the military services. In addition to increasing military pay rates generally, Congress also raised the special pay for dentists and physicians who remain in military service over six years.

Military Retirees and Dependents—Congress studied and received testimony on dental care for military retirees and their dependents, but no action was taken.

HOME FLUORIDATOR COSTS GET TAX BUREAU BLESSING

Washington Report on the Medical Sciences, No. 903, October 12, 1964. Published by WRMS, 1308-19th Street, N. W., Washington 6, D. C.*

A ruling by Internal Revenue Service should have the effect of accelerating an already brisk business—leasing of special devices for fluoridating individual home water supplies. The IRS decision: That the installation and rental costs of such devices are deductible as medical expenses if they rise out of professional dental service.

This takes care of the tax angle but yet to be decided, by Food and Drug Administration, is question whether manufacturers of the appliances—and there are several of them—must get pre-clearance certification of effectiveness. Another question: Is the food additive law to be invoked here?

At least one of the manufacturers has queried FDA on these and related points but so far neither he nor any other has applied for a "new drug" permit. The devices are being marketed and sales are reportedly good in rural and some suburban areas of the country where wells are the water source. The Public Health Service, which for years has studied practicability of individual fluoridation, is nearing completion of an investigation in suburban Montgomery County, Maryland, covering about 150 families whose well water is being fluoridated. *(Editor: Mr. Gerald G. Gross)

NATIONAL INSTITUTE OF DENTAL RESEARCH BETHESDA, MARYLAND

*Dental Students' Magazine 43(1): 36-42, October 1964.
Student's Magazines, Inc., Winnetka, Illinois.*

Established by an Act of Congress in June 1948, the National Institute of Dental Research started investigations into the causes, prevention and treatment of diseases of the mouth. Its early studies were continuations of the research that led to the fluoridation of communal water supplies.

A research grants program, started two years later, has now grown to the extent that ten million dollars is expended annually in support of 400 research projects in 129 universities and research institutions, including all the dental schools of this country. Currently an annual expenditure of six million dollars is devoted to fellowship and training programs. The latter supports about 80 separate training programs in 55 institutions providing training opportunities for some 375 potential scientists. This is an effort to curtail the existing shortage of available dental research capability, particularly in support of dental education. Included in the program are also approximately 100 fellows and 40 recipients of Research Career Development Awards.

At the Institute itself, a vigorous program encompassing a broad spectrum of dental research is carried on by a highly skilled staff. An annual budget now of approximately three and one-half million dollars gives some insight as to the scope of the research conducted at the Institute. Since its inception, the National Institute of Dental Research has devoted its efforts to the study of oral diseases that are destructive, painful, incapacitating and expensive to the American people.

DIAGNOSIS AND TREATMENT OF BACTERIAL ENDOCARDITIS

Dr. Ralph Tompsett, Chief of Internal Medicine, Baylor University, Dallas, Texas. Disease-a-Month, September 1964. Published by the Yearbook Medical Service, Chicago, Illinois.

Bacterial endocarditis is a disease which has been of special interest to clinicians for many years. Its multiplicity of symptoms and signs has intrigued teacher and pupil alike. Many isolated case reports have been published as examples of infection either rarely or never seen in other sites in man. It provides one of the most striking examples of the benefits obtained from

modern antimicrobial therapy. It is, however, a relatively rare disease which the average physician sees so uncommonly that it is difficult to gain proper perspective about it. A thoughtful and authoritative review of bacterial endocarditis was prepared by Hunter and Paterson in 1956. Since that time, considerable experience has been gained in the management of this disease so that we now are better prepared to assess the results of conventional therapy. Several new drugs have been discovered which materially alter the outcome in some patients. The advances in surgery of the heart have solved some problems and at the same time provided some new ones. For these reasons, it seems appropriate at this time to review the current status of this disease. Doctor Tompsett presents, in the complete article, a thorough picture of the clinical features, causative microorganisms, diagnosis and treatment of bacterial endocarditis. No attempt is being made in this abstract to cover the more medical aspects, however, the dentist's responsibility is well spelled out in the section on prophylaxis.

Prophylaxis. In view of the fact that endocarditis is a complication of bacteremia in patients with cardiac lesions, it has seemed reasonable from the outset to attempt to protect such patients who are at risk by prophylactic administration of antimicrobial drugs. Probably the most common type of bacteremia, and certainly the most readily studied, has been that occurring after tooth extraction. This has been shown to be preventable with penicillin, tetracycline or chloramphenicol. Other situations known to be followed sometimes by endocarditis are less readily studied but include manipulation of abscesses, cystoscopy, normal delivery and therapeutic abortion. Proof is really lacking that the customary practices of prophylaxis are of value. *Most authorities, however, recommend administration of penicillin at the time of tooth extraction starting a few hours before extraction in routine cases, or two to three days before (if possible) in the presence of apical abscesses. Tetracycline seems equally acceptable if there is any suggestion of hypersensitivity to penicillin.* Proper prophylaxis in the other situations is even less certain. The author's practice is to give tetracycline, 1.0 gm daily, as prophylaxis except where staphylococci may be involved. In patients with heart disease who have localized staphylococcal infection requiring surgery, it seems reasonable to administer some anti-staphylococcal drug such as erythromycin, novobiocin or oxacillin if one is not already being given. Whether or not prophylaxis is of value in the patient who has cardiac surgery cannot be answered at this time. The fragmentary evidence available suggests that prophylaxis has been of little value in the surgical patient.

THE USE OF FAST FILMS IN INTRA-ORAL ROENTGENOGRAPHY

*CAPT Angus W. Grant DC USN, Executive Officer,
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Background. The Defense Medical Supply Center is in receipt of numerous deficiency reports from Naval dental activities regarding the quality of ASA Speed Group Film (FSN 6525-663-1558). The employment of this ultra-speed type film is essential in the extended cone intra-oral roentgenographic technique advocated by the Dental Division of the Bureau of Medicine and Surgery (*U. S. Navy Medical News Letter*, 44(3), 7 August 1964). A great number of these deficiency reports is based on dissatisfaction with the density and contrast of the processed roentgenogram. It is felt that this is not the fault of the film itself but perhaps a lack of proper darkroom technique with resulting discrepancies in processing this type of sensitive film.

Discussion. In consonance with the augmented radiation requirements of the increased focal-film distance in the extended cone technique, the ultra-speed film is necessarily employed to reduce exposure time (MAS) and, consequently, to minimize patient radiation. A thorough knowledge of the inherent characteristics of this particular speed group film is imperative if optimum results of its use are to be obtained.

Film Speed—Film speed is governed by several factors, one of which is the size of the silver halide crystals in the emulsion—the larger the crystals, the faster the film speed. At the same time, the faster films are more sensitive to radiation, extraneous light, and film fogging. It is therefore most important that special care be taken in handling this group film.

Film Fogging—One of the most common causes of poor film quality exhibited in fast films is over-all fogging. To be considered here are the following causes:

1. Improper stowage of film
2. Unsafe darkroom illumination
3. Improper darkroom procedures

Film Stowage—Scattered and secondary radiation (which are inherent in any roentgenographic procedure) are concomitantly increased by higher kilovoltages. Unstowed films, or those in other than lead-lined receptacles, many become fogged by this type of radiation if located in the near vicinity of the operating x-ray unit. The faster speed films are decidedly more susceptible to this hazard than the slower types.

Film emulsions are extremely sensitive to relative humidity ranges above 60 and air temperatures above 90. To prevent fogging from these sources, special care must be taken in storing dental films under these adverse conditions. The use of air-tight containers and/or stowage in a cool area (refrigerator, etc.) is recom-

mended. Refrigerated film must be returned to room temperature prior to exposure to roentgen rays.

Darkroom Illumination—Items to be thoroughly corrected in processing procedures of fast film are: extraneous light leaks, safelights of too high a wattage and improper or cracked filters. These items, of course, apply to all speed films; however, the extreme sensitivity of the larger grained halide crystals in the emulsion of the "ultra-speed" or "lightning fast" films are very susceptible to even minor amounts of extraneous or excess light. "Light fog" with accompanying increased film density and impaired contrast will result.

The word "safelight" is actually a misnomer since film fogging will result on any emulsion which is subjected to subdued light for an excessive length of time. The maximum time that unwrapped film should be exposed to a safelight under any conditions is five minutes. Therefore, unwrapping such quantity of films that would require more than five minutes should be avoided.

The recommended minimum distance from lamp to work area is four feet and this requirement should be respected even if space limitations preclude it. In those confined areas (shipboard, etc.) wherein the four foot limitation is an impossibility, the safelight bulb should not exceed two watts per-foot-distance from light to work area. Ideally, under this condition, no safelight is employed.

Light filters should be checked for cracks and light leaks, both of which would render them useless. A simple procedure for checking the "safety" of the safelight and filter is to lay an unwrapped film on the working area of the darkroom table directly under the safelight. Place a small metal object, such as a coin or paper clip, on top of the film and allow it to remain for approximately one minute. If, after normal developing and fixing procedures are performed, an image of the metal object is discernible on the film, the safelight is not safe.

Processing Solutions—The importance of maintaining proper care and optimum temperature of the developing and fixing solutions cannot be over-emphasized. Quality results of excellent exposure techniques can be, and are, completely nullified by improper procedures in the darkroom. The optimum temperature of the processing solutions as recommended by the individual manufacturers is 65 or 68 degrees Fahrenheit depending upon the brand. Special care should be taken to abide by their recommendations. Higher temperatures not only hasten development but also produce chemical fogging which obscures the image on the film. Lower temperatures retard development and tend to decrease the density of the image despite the fact that prolonged development may be employed. Additionally, hydroquinone (one of the chemicals of the developer which controls contrast) is very sensitive to temperature changes—below 60 degrees it becomes inactive. In certain localities, tap

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water contains minerals and is therefore termed "hard water." If used in preparing processing solutions, a precipitate may form. Water that has been heavily chlorinated may also contaminate solutions and destroy their effectiveness. In these instances, it is advisable to use distilled water, since it is free from foreign matter.

Conclusion. The employment of the fastest speed dental films available is a necessity in extended cone intra-oral roentgenography to keep exposure time to an acceptable minimum range. However, dissatisfaction with the resulting roentgenograms will be evident if proper management of their inherent sensitivities is not exercised. Compliance with manufacturers' recommendations and accepted darkroom disciplines will provide the dental practitioner roentgenograms of the highest quality.

PERSONNEL AND PROFESSIONAL NOTES

Admiral Kyes Presents Navy Dental Program at Meeting of Military Surgeons. Rear Admiral F. M. Kyes, Assistant Chief of the Bureau of Medicine and Surgery (Dentistry) and Chief of the Dental Division presented a three-step dental treatment program for the U.S. Navy at the 71st Annual Convention of the Association of Military Surgeons, held 20-22 October 1964, in Washington, D. C.

The first two steps, preferential treatment of early lesions and the cement alloy program have been in operation for several years. The third step, to conduct research, development, test and evaluation necessary for an effective system of annual application of stannous fluoride agents is an ambitious proposal that can be applied throughout the Armed Forces. Admiral Kyes outlined dental research programs at the U.S. Naval Submarine Medical Center New London, Groton, Connecticut; U.S. Naval Dental Clinic, Norfolk, Virginia; and the Dental Research Facility of the U.S. Naval Training Center, Great Lakes, Illinois.

Based on encouraging stannous fluoride cariostasis results at New London, a clinical study at Norfolk found properly instructed groups of men, using a stannous fluoride/lava pumice mixture on their own toothbrushes, were able to clean enamel surfaces essentially as well as the technician with a rotary rubber cup. This has inspired two parallel programs at selected naval activities, one directing self-application in men under 25 years of age (those with less calculus), and those older men who require more than simple polishing of exposed surfaces. These tests are designated to provide a valid basis for a three agent stannous fluoride program which can be applied annually to all naval personnel by the fall of 1965.

New Dental Facilities Opened at Great Lakes. Rear Admiral H. A. Yeager, Commandant, NINTH Naval District announced the opening of a new medical/dental facility at the U.S. Naval Training Center, Great Lakes, Illinois on 2 October 1964. The Dental and Medical Departments of the Administrative Command will share occupancy of the \$1,800,000 building which replaces temporary facilities in use since World War II.

Rear Admiral F. M. Kyes, DC USN, Assistant Chief of the Bureau of Medicine and Surgery (Dentistry) officiated at ceremonies opening the dental facility. He was assisted by CAPT G. L. Parke DC USN, Director, Dental Activities, NINTH Naval District, and CAPT M. G. Turner DC USN, Dental Officer, Administrative Command, U.S. Naval Training Center, Great Lakes, Illinois.

The modern air-conditioned dental spaces, occupying two stories of the South wing of the building, are equipped with new units and chairs, mobile dental cabinets, operating stools, diffuse overhead lighting and a central oral evacuation system. The fifty chair clinic includes thirty-five rooms for operative dentistry, four each for prosthetics, oral surgery and periodontics, and three for endodontics. In addition there are two roentgenographic units, a prosthetic laboratory which accommodates eighteen technicians, a central sterilizing room, a recovery room for surgical cases and administrative offices. A sixteen bed ward is available for dental patients.

An "open house" was held on 3 October 1964 featuring refreshments and a guided tour of the new facilities. Invited guests included members of the Navy Dental Corps and their families, Dental Officers from neighboring Armed Forces, and members of the Veterans Administration.

Participation in Professional Meetings. CAPT A. R. Frechette DC USN, Commanding Officer, U.S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland, presented a lecture, "Partial Dentures," for the First District Dental Society, New York, New York. CAPT Frechette also participated in the Annual Session of the American Dental Association by presenting an essay, "Complete Denture Stability," and by moderating a panel discussion, "Immediate Dentures."

CAPT Gordon H. Rovelstad DC USN, presented a lecture, "Dentists' Responsibility to Preventive Dentistry," for the Alpha Omega Fraternity, in Washington, D.C., on 4 November 1964. He will also present an essay, "Salivary Components and Their Relationship to Oral Disease," at the American Association for the Advancement of Science, in Montreal, Canada, on 27 December 1964.

CAPT P. C. Alexander DC USN, presented a clinical lecture, "The Periodontium and the Cuspid Protected Occlusion," at the Annual Session of the American

Dental Association, in San Francisco, California.

CAPT Joseph "L" Tenaglia DC USN, presented a lecture, "The Mandibular Third Molar; its Manage-

ment," at the Scientific Session of the Zambales Dental Society Meeting in the Republic of the Philippines, on 4 October 1964.



PREVENTIVE MEDICINE

SANITATION AND PEST CONTROL IN DISASTER AREAS

HMC Charles W. Roane USN, Sanitation Section, Health Practices Branch, Preventive Medicine Division, BUMED.

(Editorial Note: Chief Roane is one of several personnel from U.S. Navy Preventive Medicine Unit Number 6, Pearl Harbor, Hawaii, who conducted pest control training on Guam when typhoon "Karen" struck in November 1962. This article is the result of the experiences of these personnel following the disaster. While this report deals with the outgrowth of a disaster on a tropical island, the principles of organization, logistics control, and operational procedures have general applicability to all shore activities.)

1. *Introduction.* Voluminous plans and reports exist for disaster control at most naval shore activities. Because of their bulk, they may sometimes be briefly scanned during a person's first days on a new job and seldom reviewed thereafter. This report is intended as a brief, workable plan which may be put into operation within a minimum of time and convenient for ready reference.

2. *Establishment of a Sanitation Command Post.*

a. The Preventive Medicine team has the responsibility of establishing a sanitation command post in a suitable place such as pest control or sanitation headquarters. The command post should have at least two telephone lines if possible.

b. Make contact with all sanitation personnel in the area who may be of assistance, including military sanitation personnel, local public health authorities, and local civilian sanitarians. They should be advised to channel information and requests for information and assistance through the command post. They should inform the command post of their whereabouts during the emergency.

c. Convene a meeting of these personnel as soon as possible and explain the current situation. Publish or

otherwise designate the sanitation tasks for each person. Task areas must include water sampling, food service area sanitation, garbage collection, and control of insect breeding areas.

d. Make these people your eyes and ears. Have them report at least once daily. You must designate responsibility for collection of information, for you will not have time to do it yourself.

e. Maintain liaison with key personnel in other military departments: all commanding officers, the public works officer and his master mechanics and foremen, the transportation officer, the supply officer or his delegated representative for your interests, and the person in charge of the water plant. Many reports will funnel in to these people about conditions that will appear to untrained eyes as far worse than those actually existing at this time. You may save them many headaches if they will allow you to investigate the reports and abide by your recommendations for action on them.

f. Make periodic reports to the medical officer who has been designated as Health Officer (or similar title) for the emergency.

g. Investigate situations and make true reports to responsible authorities.

h. **KEEP CALM AND USE COMMON SENSE.** Hot verbal exchanges are bound to occur. Tact and diplomacy will stand you in good stead as tempers shorten.

i. Make effective use of the people who work for you. Don't push the panic button and, in spite of an old adage, don't "do things just for the sake of doing them." Have a definite series of goals in mind and work steadily toward them.

3. *Water.*

a. Before the disaster strikes (advance planning):

(1) Go to the main water plant and check out the system with a responsible person. Continue the check to the periphery of the system.

(2) Request establishment of a standing instruction to hyperchlorinate water to 5 ppm residual chlorine in the event of a disaster situation (until conditions return to normal).

(3) At the time of the water system survey, ascertain also the conditions of the sanitary and storm sewers and take corrective action as far as possible.

(4) Check water reservoirs for covers.

(5) At setting of storm condition (or disaster condition) #1, direct personnel of all barracks and galleys to fill clean G.I. cans and other available containers with standby water for cooking, drinking water, flushing heads, etc., according to previous instructions—and drills, if possible. Water tankers and 5-gallon tins of water should be taken immediately to preassigned places for use as drinking water.

b. After the disaster check on steps 3a (1) through (5) as best as possible.

4. *Food.*

Inspection of food sources, food service areas and other measures to assure safe food for consumption follow standard practices. It may be necessary to institute field messing techniques with emergency field rations. These methods are generally well known and should require no amplification here. The Navy Landing Party Manual is an excellent sourcebook.

5. *Sewage and Other Waste.*

a. See par. 7.

b. Utilize existing sanitary facilities whenever possible. When damage to the installations has occurred, employ field practices described in the Navy Landing Party Manual, Chapter 7, OPNAV P 34-03. *These field techniques should be kept to the essential minimum, for they pose long-lasting hazards to health after the emergency period has passed.*

6. *Pest Control.*

a. *Insecticides*

(1) Take a complete inventory of all insecticides

available in the pest control shop, in the military supply depot, and in civilian areas. *An on-site survey of insecticides will be necessary. Mere checking of inventory cards is not proof of availability.*

(2) At the same time, check the supplies of kerosene and solvents. Avoid checking by trade name; check under paint solvents for mineral spirits.

(3) Maintain the master inventory current throughout the operation. A blackboard and chalk are useful for maintaining a running inventory.

(4) Pool only those insecticides necessary for fogging and spraying residuals. The rest should remain in their present area until use is indicated; authorization for use should emanate only from the sanitation command post.

(5) Use insecticides obtained from local civilian sources for local civilian treatment if possible. Tag these so that accountability can be maintained.

(6) Determine what insecticides have been ordered but not yet received and add them to the master inventory. Top priority should be given to your requisition orders and air shipment should be available.

b. *Equipment*

(1) Prepare a master inventory of all pest control equipment and its location in the pest control shop, supply depot, and in local civilian areas. The inventory should include: TIFA's, buffalo turbines, dusters, mixers, sprayers, rat traps, bait stations, respirators, masks, cartridges, coveralls, and protective gloves.

(2) Maintain a running inventory of all equipment and a locator index.

(3) Instruct supervisors and workers at frequent intervals to make good use of this equipment, which should be in use as much as possible while a need exists. If an apparatus is not being used by one team for the time being, it should be reassigned.

(4) Protective helmets are advised when working in disaster areas.

c. *Personnel*

(1) Determine how many personnel are available for pest control work and the nature of their training and capabilities.

(2) Assemble them at a briefing session, explain what must be done, what priorities are necessary, and how important the work is. Job motivation should be stimulated as often as possible by such methods.

(3) Procure protective coveralls and helmets for all personnel and stencil the gear with an appropriate designation such as "PWC PEST CONTROL." Distribute the gear to the operators and supervisors. Use of such a uniform will simplify access to disaster areas and permit rapid identification of team members.

d. *Surveys and Map Plotting*

(1) Procure several maps of the disaster area and, with the aid of personnel who know the area, plot dumps, both military and civilian, local health centers and hospitals, swamps and other potential insect-breeding places, location of tent camps and field kitchens, and any other areas that may be a source of sanitation problems.

(2) Start a general survey for trouble areas by using trained sanitation personnel for the task; local sanitarians and others may be used as guides. Information should be plotted on the map; plastic overlays may prove useful for this, if available.

(3) Break the area into designated subareas and assign a sanitation team to each area for a more detailed survey.

(4) As information is received, collated, and plotted from the detailed surveys, send pest control crews into trouble areas under supervision of sanitation personnel to direct their efforts in treating these areas.

(5) Keep a standby crew of pest control personnel and power sprayer equipment for dispatch to any area that may need immediate emergency treatment.

(6) As survey data accumulate, exchange information with the public works department so that duplication of effort may be kept at a minimum.

(7) During any survey, ascertain what conditions existed before the disaster so that a comparison may be made of the extent of the problem before and after. Many times, persons become acutely aware of a condition that has always existed but which assumes new prominence in time of stress. Often these preexisting problems, with low priority for rectification, may now be aggravated to such a degree that top priority is necessary.

e. *Operations*

(1) Pest control operations will require intensification of normal routine procedures for the most part. Fogging should be done only if a need exists. Determine if mosquitoes are really disease vectors or simply pests. Strong pressure will be exerted to fog because everyone is used to seeing "Smoky Joe" in the area. To fog just for this reason is a waste of personnel and insecticide which are critical at this time. These facts should be thoroughly explained to the Health Officer and public works officials.

7. *Miscellaneous Operations.*

a. Report to the health officer, the medical officer, the commanding officer(s), the public works officer and the public works foremen daily. Often this can be accomplished at one of the daily conferences of the commanding officer. Continuously emphasize the need to have complete control of sanitation and pest control operations at the Sanitation Command Post. Suggestions should come from the commanding officer via the health officer only.

b. If the local radio station is operating, or upon resumption of operation, it is recommended that broadcast be made daily of short bulletins on health and sanitation practices, and to acquaint the public of actions instituted to prevent outbreaks of disease. Telephonic or personal interviews with the officer-in-charge of the Sanitation Command Post are useful in preventing exaggerations and misrepresentations of health conditions.

c. Short bulletins and handouts for publication and distribution on such subjects as water supply, slit trenches, burial of waste and garbage, burning of refuse, etc., will prove helpful in maintaining good sanitation, good public interest and co-operation.

PSITTACOSIS SURVEILLANCE

Morbidity and Mortality Weekly Rept., HEW, Communicable Disease Center, Atlanta, Ga., 13(39): 338-343, October 2, 1964.

During 1963, 76 cases of psittacosis in humans were reported. Seventy-nine cases were reported in 1962; this is approximately one-half the annual number reported 5 years ago, and only 13% of the total human cases recorded in 1954.

The 1963 cases occurred in 19 States. A majority of the total cases were reported by 3 States: Texas (17), California (14), and Illinois (11).

To date this year, there are 35 cases of psittacosis reported. California has the largest number of cases of any State with 13 (37%).

The histogram in the original of the above referenced article represents the number of reported cases each year since 1949, with peak incidence occurring in 1956 with 568 cases. The large number of cases reported in 1954 and 1955 is believed due primarily to recognition of cases acquired from commercial poultry.

Epidemiologic data has been obtained by the Communicable Disease Center on the source of infection for 1,270 of the 2,418 human cases of psittacosis which have occurred since 1954. Parakeets were the source of infection in 747 cases. They are the traditional source of most human infections; however, they do not account for the increased number of cases recorded during the early years of this period. Data studied suggest that at least part of the increased incidence of psittacosis was due to recognition of cases acquired from infected fowl.

When the human cases were grouped by exposure category, pet bird breeders, dealers and owners accounted for 579 of the 1,290 investigated cases while an additional 370 cases occurred among poultry processors. These individuals were exposed to infected turkeys or other domestic fowl.

The only significant common-source outbreak during 1963 occurred in Texas where at least 11 of the 17 reported cases occurred in individuals exposed to ornithosis-infected turkeys in a poultry processing plant. Between April 21 and May 27, 1963, 11 employees of a small turkey processing plant became ill with mild symptoms including chills, dry cough, chest pains, general malaise, and fever to 102°F. Complement fixation tests confirmed the diagnosis of psittacosis. Eight of these cases had onset dates between April 21 and April 28, 1963; 3 cases had onset dates between May 24 and May 27, 1963, thus indicating that there were 2 separate exposures, roughly one month apart. Epidemiologic investigation by the Texas State Department of Health traced the outbreaks to 2 separate infected turkey flocks, one processed on April 11 and the second on May 14.

The isolation of the causative agent in 1930, coupled

with numerous epidemics with a high case-fatality ratio, led to regulations controlling the importation of parrots, and later all psittacine birds into this country. Since then, the discovery of many new avian hosts and related etiologic agents has increased the epidemiologic complexity of the disease. At the same time, the introduction of antibiotics and effective control measures has reduced the public health significance of this zoonosis.

General Order No. 20—"Medical and Agricultural Foreign and Domestic Quarantine Regulations for Vessels, Aircraft and Other Transport of the Armed Forces," of 12 May 1962, Section VI, (of interest to those persons moving to and from overseas) permits transport of *Psittacine* birds on Military Sea Transportation Service ships and Military Air Transport aircraft when certain conditions are met.

FOOD POISONING

Richard D. James, Wall Street Journal, SW Edition, XXXIII(114): 1, 13, June 9, 1964.

Thirteen people who ate eclairs purchased from a Detroit bakery became seriously ill with cramps and other symptoms of food poisoning. Investigators found that water polluted with salmonella germs was used to process some poultry feed, infecting chickens who passed the bacteria to eggs which wound up in the bakery's eclairs.

Outbreaks of salmonellosis and some other forms of food poisoning have increased sharply in recent years, causing growing concern among public health officials and the food industry. As a result, scientists are stepping up efforts to understand and possibly prevent outbreaks. Federal and state health officials also are tightening regulations and increasing supervision of food processors. And the food industry is intensifying its own policing of standards.

Food poisoning cases reported to the U. S. Public Health Service last year totaled 16,800, well above the 9,500 of the previous year and the 10,000-a-year average of the past decade. While part of the gain is due to better local reporting of cases, some portion represents an actual increase, officials say. The reasons for the increase are far from clear.

Peril of Mass Production. Doctor Lawrence K. Altman, epidemiologist at the Communicable Disease Center of the PHS, suggests that the growth and complexity of the food industry partly explain the increase. "There is far more mass-produced food than ever before and if something is contaminated, more people

will fall victim to it," he says. "As the food industry becomes larger, there are more food handlers, increasing the chance for carelessness. Food processors may buy from more suppliers—more farms—which could provide a greater source for germs, too."

The true total of food poisoning undoubtedly is far higher than reported cases, officials say. Many an upset stomach thought to be flu or indigestion may actually be a mild case of food poisoning. Estimates of the true total run anywhere from 200,000 to more than 1 million cases a year in the United States.

The under-reporting of food-borne illness is illustrated by figures for salmonella poisoning. Officially, there were 2,300 cases last year caused by food containing the germ, up sharply from 1,513 in 1962 and only 750 in 1961. But a great many more cases of salmonellosis couldn't be linked definitely to food, though officials say food is a likely source. Total cases last year numbered 18,000, almost double the year earlier level.

Most disturbing of all to health authorities is the appearance in commercial foods of a rare and life-threatening form of poisoning called botulism. Nine deaths last year were traced to commercial tuna and smoked whitefish contaminated with the botulinum germ's toxin.

Worst Year Since 1925. "No explanation can be provided for the sudden occurrence of commercial (botu-

lism) outbreaks during 1963," says the Communicable Disease Center of the Public Health Service. Last year's nine fatalities were the most since 1925 and well above most pre-1925 years when less stringent commercial canning standards were observed. The deaths were among 24 cases of botulism linked to commercial foods, two more than the total caused by home-preserved foods. Officials note this reversed the pattern of previous years when "the vast majority" of botulism cases stemmed from home canning of foods such as green beans and corn.

A food poisoning incident can have devastating economic impact, at least temporarily. A can of commercial tuna, packed for a supermarket chain by an independent West Coast concern, is believed to have caused the botulism deaths of two Detroit housewives last year. News of the deaths caused the nation to suddenly lose its appetite for tuna and the average wholesale price slumped to \$10.60 a case from \$12.50. Dollar sales for 1963 fell to about \$175 million from 1962's record \$210 million, the industry estimates. However, sales this year are running 10% to 15% ahead of the year-ago period.

Other segments of the food industry realize the same thing could happen to them. "It's a dollars-and-cents proposition, not an altruistic matter on our part," says the chief microbiologist for a large meat packer, describing his company's fight against one type of food poisoning. "All we'd need would be one case traced to our products."

Botulism is fatal in at least half of all cases. The toxin, or poison, which causes it is produced by the botulinum germ, *Clostridium botulinum*, when it grows on food in the absence of oxygen. Thus, a vacuum-sealed can is an ideal environment. Cooking, however, destroys the toxin.

Tracking Down Type E Germs. Scientists are working hard to learn more about the ailment, which attacks the nervous system. One of the puzzling things under investigation is the number of cases of type E botulism, one of five varieties. Before 1963 there were only 36 cases on record, but last year alone there were 22, all related to commercial fish products.

The U.S. Food and Drug Administration recently contracted with Oregon State University and the University of Wisconsin to determine the source and prevalence of type E germs. Wisconsin scientists thus far have netted about 500 chubs, perch and other Great Lakes fish, and taken over 200 mud and water samples in the search for the bacteria. Meanwhile, FDA's own researchers are trying to understand how different food environments affect the growth of the bacteria. The agency has assigned three full-time microbiologists to the project.

At a research center of a large can company, scientists also are studying how type E germs behave in various environments. They hope to learn the exact

conditions under which the bacteria grow and then apply the findings to safer types of packaging. "We're also testing various chemicals in hopes of finding one that could be injected into fish, for example, to prevent the organisms from growing and producing toxin," says an official.

Other companies are tightening quality controls. The assistant general manager of a Chicago frozen fish production firm says, "Plant superintendents, foremen and quality control people have been told they'll be fired if they don't follow sanitary regulations to the letter, whereas before they might get by with a warning. In addition, we've added 10 more quality control clerks and we're running checks on finished samples every half hour instead of every hour."

In California, one of the centers of the canning industry, companies have added extra employees to inspect can seams, reports John E. Hammer of the state's bureau of food and drug inspection. "Some small fish processors now are inspecting seams once an hour compared to once or twice a day" before the botulism cases, he says. "Big plants are inspecting every five minutes compared to once an hour previously." One reason is the theory that botulinum bacteria from unknown sources entered tuna cans last year through faulty or broken seams, probably after the sealed cans left the sterilizing temperatures of the retort where the tuna was cooked.

Government regulatory agencies, too, are enforcing stricter controls. The FDA now requires all Great Lakes fish smokers to freeze their product. Distribution of the fish in frozen form is considered safe because the botulism toxin is not known to develop at low temperatures, the FDA says. Smoked Great Lakes whitefish—not in frozen form—is blamed for seven of last year's nine botulism deaths. In five of the cases, the whitefish was packed in vacuum-sealed plastic bags and was part of a single shipment to a supermarket chain.

New Michigan Rules. The state of Michigan also has drawn up its first regulations for processing smoked fish. The new rules require processors to have proper recording equipment to show that prescribed times and temperatures are followed. They also forbid vacuum packaging unless the product is processed to kill any germs and prevent the production of toxin in the vacuum.

A similar determined attack by industry and regulatory agencies is being directed at salmonellosis. Salmonella germs are widespread in livestock and poultry flocks. Concern was heightened recently when 900 patients in 59 hospitals in 16 states contracted the disease through eggs served raw or undercooked to those on special diets.

Health officials believe that the infection often begins with germs in raw meat scraps and fish meal that go into animal feeds. Feed manufacturers and their sup-

pliers are voluntarily taking steps to clean up feeds.

Ralston Purina Company recently completed an intensive analysis of ingredients from all suppliers to determine if there was any contamination, a step never undertaken before, according to Doctor Charles F. Rossow, manager of Ralston's microbiology section. An undisclosed number of suppliers were found to have salmonella problems. Ralston hasn't stopped buying from them yet. "These suppliers have been warned that they do have a problem; we've asked what they're doing to correct it and we're working to help them." says Doctor Rossow.

The main problem facing renderers and fish meal producers is recontamination of ingredients which are sterile after they're processed. "We keep the raw ingredients and the finished product entirely separate," says an official of an East Coast rendering company. "Workmen going between areas must scrub off their footwear, wash their hands and change coveralls. We also have separate sets of clean-up tools, like brooms and shovels, for each area; we even painted the set in the processed area white so there'll be no mix-up."

Salmonella Testing Begun. The Agriculture Department is working with companies and state health officers to set up a voluntary testing program to systematically screen samples of feed and feed ingredients to detect salmonella bacteria. The program began earlier this year on a limited scale in some Southern states. "We hope to have it operating nationally by the end of the year," says Doctor John Walker of the USDA's animal disease eradication division.

Vigilance against staphylococcal food poisoning also is increasing. Staph infections carried by food are, along with salmonellosis, among the commonest kinds of food poisoning. Staph outbreaks typically occur at large social gatherings where food is prepared in advance and allowed to stand at room temperature. In five hours on a summer day staph germs can produce enough toxin to cause illness.

The number of reported cases has averaged about 1,700 a year for the past few years, but "this probably represents only about one-tenth of the actual number," says Doctor Philip S. Brachman, chief of the Communicable Disease Center's investigations section.

KNOW YOUR WORLD

Did You Know?

That the Government of Bolivia is undertaking a 2-year campaign against foot and mouth disease?

In the 23,000-square-mile Cochabamba Province, 20,000 cattle will be vaccinated with a new, weakened live virus developed by the Pan American Foot and Mouth Disease Center in Brazil. This vaccine will give protection much longer than the killed virus vaccines in present use. The Pan American Sanitary Bureau,

WHO Regional Office for the Americas, will assist in the project. (1)

There were 9,320 cases of viral hepatitis reported in the United States in the spring quarter of the epidemiological year 1963-64.

A total for that reported year (1963) was 40,657 cases with an incidence of 21.6 per 100,000 population. This total of reported cases and incidence was the lowest reported since the peak year 1960-61. (2)

That deaths from chronic pulmonary emphysema, a crippling lung disease, have more than quadrupled in the last 10 years?

So reported the Chief of the Division of Chronic Diseases of the Chest to the International Congress on Diseases of the Chest, held in Mexico City, on 13 October 1964. While tuberculosis has declined sharply as a killer andcrippler, lung cancer has shown a strong increase and a group of nonspecific respiratory conditions have emerged, killing 27,000 Americans and hastening the death of another 43,000 in 1962. (3)

That water and sewer bond sales by State and local governments in the United States totaled at least \$1,319,000,000 in 1963?

"The Water and Sewer Bond Sales in the United States, Jan-Dec 1963," report, recently released, further states that in 1963, bonds for financing water facilities totaled \$614 million, and for building sewage treatment facilities and sewers amounted to \$524 million. Another \$182 million in bonds were used in combination projects for both water and sewerage construction. California led all other States with a total of \$280,-774,000 bonds sold. (4)

That there are over 4,000 cancer quacks in the United States and the American public spends approximately \$10,000,000 a year for their ministrations?

Since 1960, the California State Department of Health has been enforcing the Cancer Antiquackery law adopted by the California State Legislature in 1959. (5)

That 60,000 narcotic addicts in the United States are responsible for the waste of \$450,000,000 a year and that \$350,000,000 alone are spent on illegal drugs?

The American Social Health Association reported recently that the typical male addict steals \$30,000 to \$90,000 in merchandise or money in a year's time while the female addicts usually resort to prostitution to obtain money to support their use of narcotics. (6)

That the world total of smallpox cases of 92,761 in 1963 exceeded the annual average number of cases for the years 1959-1963 by 16,527 cases?

The total number of deaths reported in 1963 (24,530) exceeded the annual average for the same period world-wide by 8,199 deaths. (7)

References:

1. WHO Chronicle, 18(9): 356, Sept 1964.
2. DHEW PHS CDC Hepatitis Surveillance Report No. 20: 1, Sept 30, 1964.
3. DEHW PHS Div Chronic Dis. Press Release, HEW-678, Oct 13, 1964.
4. DHEW PHS Professional Release & PHS Publication No. 965, 1963 Edition.
5. Los Angeles Co. Health Index, Los Angeles Co. Health Department, Sept 5, 1964.
6. "This is ASHA" p. 6, Sept 1964, published by the American Social Health Association, Inc., 1790 Broadway, New York 19, New York, to present its Program and Services.
7. WHO Chronicle, 18(10): 376-379, Oct 1964.

EDUCATION CHECKS TATTOO HAZARD

*Health Officers NEWS DIGEST, XXX(9): 11-14,
Sept 1964.*

As a seaport and headquarters of the Eleventh Naval District, the city of San Diego has many tattoo parlors. These parlors are under regular inspection by the Division of Sanitation of the San Diego County Department of Public Health. Ordinances in the Municipal Code specify that tattoo artists sterilize their instruments and sterilize the skin before applying a tattoo. However, a few years ago the Department received a report from the Medical Officer of the Naval District concerning infected tattoos among Navy recruits.

The Division of Sanitation conducted a special survey of the situation. Tattoo ordinances were reviewed, and tattooing methods in use were studied in detail.

The survey revealed that the tattoo artists were trying to do the right thing, but the ordinances were not specific enough to give them infallible guidance.

More specific supplementary regulations were prepared. But the Chief of the Division of Sanitation felt that regulations alone would be inadequate; that the tattoo artists must thoroughly understand the problem of possible infection at every point in their procedure. He suggested an educational approach similar to the food handling classes which have been so successful with restaurant personnel.

A supervising sanitarian was assigned to develop a two-day training program for tattoo artists, the first such training program in the Department's history. The classes were planned with the Department's Bureau of Public Health Education and owners of the tattoo

parlors. The owners were consulted as to the best time of day for the training and the number of hours that could be spent on it. They were enthusiastic about the possibility of training and sincere in the desire to improve their methods.

When the classes were presented, there was a pleasant surprise—every tattoo artist in the county, 30 in all, appeared. All came back on the second day.

The first day's program began with introductory remarks by the Director of the Department. It included films on the infectious process, a lecture on bacteriology, and a lecture by the Chief of the Bureau of Laboratories on the use of the autoclave. The second day's program dealt with sterile procedures and the supplementary regulations for tattoo parlors.

The following week, sanitarians inspected the parlors to evaluate the training. Each of the artists was taking an active interest in employing the new sterile procedures. The operators had even experimented and learned how to autoclave the dyes without destroying them. No infected tattoos have been traced to San Diego tattoo parlors since then.

FEE SCHEDULE OF 2000 YEARS AGO

*H.E. Sigerist, MD: A History of Medicine, Oxford
Pub. N.Y., 1961 Medical Director's Notebook,
Sept. 1964*

From a Persian ms. ca. 250 B. C.

"A healer shall heal a priest for a holy blessing; he shall heal the master of a house for the value of an ox of low value; he shall heal the lord of a borough for the value of an ox of average value; he shall heal the lord of a town for the value of an ox of high value; he shall heal the lord of a province for the value of a chariot and four (horses).

"he shall heal the wife of the master of a house for the value of a she-ass; he shall heal the wife of the lord of a borough for the value of a cow; he shall heal the wife of the lord of a town for the value of a mare; he shall heal the wife of the lord of a province for the value of a she-camel.

"He shall heal the son of the lord of a borough for the value of an ox of high value; he shall heal an ox of high value for the value of an ox of average value; he shall heal an ox of average for that of an ox of low value; he shall heal an ox of low value for the value of a sheep; he shall heal a sheep for the value of a meal of meat."



RESERVE SECTION

AMERICAN BOARD CERTIFICATIONS

The Bureau of Medicine and Surgery has been notified by the American Board of Internal Medicine that the following Reserve Officers have been certified:

LCDR Stanley R. Finke MC USNR	626860/2105
LCDR Joseph A. Glennon MC USNR	625208/2105
LCDR Richard J. Greenwood MC USNR	616820/2105
LCDR James C. Jordan MC USNR	624026/2105
LCDR Marvin A. Leder MC USNR	625591/2105
LCDR Harvey L. Lerner MC USNR	625512/2105
LCDR John T. Magee MC USNR	625607/2105
LT Michael A. Manko MC USNR	604489/2105
LCDR William E. Mayberry MC USNR	568150/2105
LCDR John C. McGiff MC USNR	495633/2105
LT Murray J. Miller MC USNR	618952/2105
LT Arthur J. Moss MC USNR	625423/2105
LT Thomas J. Pekin, Jr., MC USNR	582260/2105
LT Fredric Reichel MC USNR	625409/2105
LCDR Oscar W. Shapiro MC USNR	611373/2105
LCDR Alton R. Sharpe, Jr., MC USNR	589140/2105
LCDR Frederic F. Taylor MC USNR	587582/2105
LT Lawrence Troum MC USNR	616669/2105
LT John Arthur Winter MC USNR	567164/2105

BUPERS INSTRUCTION 1571.20D 5 October 1964

Subj: Active Duty for Training with Pay for Non-Pay Personnel (Pay Group D)

1. *Purpose.* To promulgate guidelines for active duty for training for personnel in non-pay status.

2. *Cancellation.* BuPers Instruction 1571.20C (NOTAL) is cancelled.

3. *Background.* The cost of maintaining the paid drilling portion of the Selected Reserve has continued to increase and must continue to receive first priority for paid active duty for training. In addition, the onboard strength of the Selected Reserve has been near the limiting ceiling imposed by the Secretary of Defense so that funds utilized in the past to divert to the payment of active duty for training for non-pay personnel are not presently available. The Secretary of Defense has established a ceiling on the number of officer and enlisted personnel in a non-pay status who may perform active duty for training with pay and further stipulated that officers in a non-pay status being ordered to two weeks active duty for training with pay must be assigned a mobilization billet to which they are scheduled to report within M+90 days. This restriction was not extended to enlisted personnel.

NOTE: This Instruction continues with *Quotas, Guidelines, and Action.*

A survey has shown that in the USA more than 400,000 children, including 13,000 under 6 years of age, are left to their own devices while their mothers go out to work. This situation is paralleled in many other countries, and the expansion of day-care services for children is being increasingly recognized as a public responsibility.—WHO Chronicle 18(10): 364, October 1964.

During 1963 more people contracted smallpox and more people died from it than in any year since 1958. This does not, however, mean that the world-wide smallpox eradication campaign is proving ineffective, but simply that it has not yet reached a stage at which its influence can be reflected in the overall incidence figures.—WHO Chronicle 18(19): 376, October 1964.



MISCELLANY

ADVANCED COURSE IN NUCLEAR SCIENCE FOR MEDICAL OFFICERS
(NSMO) SPONSORED BY THE DEFENSE ATOMIC SUPPORT AGENCY
(DASA) AT THE UNIVERSITY OF ROCHESTER, NEW YORK

CLASS	INCLUSIVE DATES	DEADLINE DATE TO APPLY	SECURITY CLEARANCE REQUIREMENTS
#18	28 June 1965—July 1966	15 January 1965	Top Secret

Mission: It is the mission of the NSMO Course to provide the opportunity for a limited number of selected Army, Navy and Air Force Medical Officers to acquire the additional technical education needed to cope with the radiobiological problems involved in all phases of the National nuclear energy program.

Scope: The course provides for a review of selected portions of mathematics and physics during the refresher phase, followed by a full academic year of graduate study involving radiological physics, health physics, biological effects of radiation, evaluation of radiation hazards, environmental hygiene and toxicology, and as electives, related areas of industrial medicine and radiology. Completion of the academic phase at acceptable performance levels can lead to a Master's Degree in Radiation Biology, in one year for those entering with doctoral degree and upon completion of additional research or special studies for those not having previous professional training. The academic phase is followed by a study of practical military nuclear medicine. During the course the medical aspects of nuclear radiation over the complete range of intensity levels from low-level, peacetime laboratory situations through high-level, full scale nuclear warfare situations are discussed.

PHASE I (9 WEEKS)	PHASE II (10 MONTHS)	PHASE III (4 weeks)
ACADEMIC REFRESHER SUMMER SCHOOL SESSION UNIVERSITY OF ROCHESTER ROCHESTER, NEW YORK	RADIATION BIOLOGY SCHOOL OF MEDICINE AND DENTISTRY UNIVERSITY OF ROCHESTER ROCHESTER, NEW YORK	MILITARY NUCLEAR MEDICINE FIELD COMMAND, DASA, SANDIA BASE ALBUQUERQUE, NEW MEXICO

Eligibility: The course is primarily designed for officers of the Medical Corps. However, officers of the Medical Service Corps, in very closely allied medical fields who have had some graduate work beyond the B.S. degree may also be eligible for selection.

Requests should be forwarded in accordance with BUMED INSTRUCTION 1520.10B and comply with the deadline date as indicated above. All requests must indicate that a security clearance of TOP SECRET has been granted to the officer requesting attendance, or that action to obtain clearance has been initiated.

—Training Branch, Professional Division, BUMED.

NEW ORGANIZATIONAL FLAG PRESENTED TO AFIP

A host of high-ranking military and civilian medical personnel attended the formal presentation of the new organizational flag to the Armed Forces Institute of Pathology at the Institute, September 16.

During the ceremony, the AFIP was also awarded the Air Force Outstanding Unit Award for "exceptionally meritorious service of both national and international significance." The award was presented by Maj. Gen. Richard L. Bohannon, Surgeon General of the Air Force.

The flag, designed by the Army Institute of Heraldry, was presented to the AFIP Board of Governors by Dr. Shirley C. Fisk, Deputy Assistant Secretary of Defense, Health and Medical. The Institute's Board of Governors, composed of the Surgeons General of the Army, Navy and Air Force, was represented by Rear Admiral E. C. Kenney, Surgeon General of the Navy, and Maj. Gen. Richard L. Bohannon, Surgeon General of the Air Force. Brig. Gen. Conn L. Milburn, Deputy Surgeon General of the Army, represented Lt Gen. Leonard D. Heaton, Chairman of the Board and Surgeon General of the Army. Also attending the ceremony was Dr. Luther L. Terry, Surgeon General of the U. S. Public Health Service.

The brief ceremony was opened by the U.S. Army Band and a tri-service color guard. AFIP Director Brig. Gen. Joe M. Blumberg gave the formal welcome and introduced Dr. Fisk, who presented the flag. CDR Robert E. Brengartner, Chaplain of the National Naval Medical Center, delivered the invocation and the benediction was given by Chaplain (Col.) Roy A. Morden, Chaplain of the Walter Reed Army Medical Center.

The presentation was given added color by the display of the 54 state and territorial flags in front of the

AFIP building where the ceremonies were held. In addition to Dr. Fisk and the Surgeons General, more than a score of other officials from the Defense Department, the offices of the Surgeons General and several other military and governmental installations in the Washington area attended.

LT WILLIAM A. STONE, MC USN, RECEIVED THE NAVY COMMENDATION MEDAL FROM THE SECRETARY OF THE NAVY ON 5 OCTOBER 1964 FOR SERVICE AS SET FORTH IN THE FOLLOWING CITATION:

"For meritorious service on 5 January 1964 while serving at the Station Hospital, Headquarters Support Activity, Saigon, Republic of Vietnam. Upon learning that friendly casualties were heavy among two battalions that were engaged in battling the enemy in the vicinity at Tan An, Lieutenant Stone, in order to render assistance to the wounded, volunteered to accompany several armed helicopters which were taking off for the area. Although the helicopters could not land due to the intensive ground fire, he remained with them on several subsequent missions in an attempt to land in ground troop positions. On one mission he was painfully wounded in the chin, but continued operations with the helicopters until its forced return because of battle damages. Upon landing, he aided in treating a seriously wounded crew member of another helicopter before allowing himself to be treated. Lieutenant Stone's inspiring and selfless devotion to duty in the face of hostile fire reflects great credit upon himself and the naval service."

The Combat Distinguishing Device is authorized.

ALERT FOR ENCEPHALITIS

Flocks of chickens serve as sentinels against any sneak attack by encephalitis in New Mexico. The vector control section of the State health department sets mosquito traps within special chicken pens to permit collection of live mosquitoes for weekly identification and virus isolations. Chickens are bled monthly for antibody determination. Thus an early alert may be expected if the encephalitis virus becomes active; knowledge of the species carrying the virus, in case it appears, will also be obtained.—Public Health Reports 79(10): 924, October 1964.

HEALTH AID TO MILITARY REJECTS

The Maryland State Department of Health has established a counseling and referral service to help the large number of draft-age youths who are rejected for military service because of physical reasons. Purpose of the program is to promote early diagnosis of health problems and encourage the youths to seek medical care promptly, thus alleviating medical, vocational, and social difficulties.—Public Health Reports 79(10): 924, October 1964.

USN MEDICAL OFFICERS PRESENT PAPERS AT WEST COAST RESEARCH RESERVE SEMINAR

Two of the four papers on medical topics during the half day devoted to medical research at the West Coast Research Reserve Seminar held at San Diego, 19 and 30 October, were read by regular Navy medical officers. CAPT F. W. George, of the U.S. Naval Hospital, San Diego, reviewed recent technical advances in radiological therapy. Commander Ransom Arthur, Officer in Charge of the Medical Neuropsychiatric Research Unit, presented recent results of research in neurology and psychiatry. He called attention to the unusual opportunities for research on some diseases made possible in military environments because the Navy does not lose track of men after diagnosis and treatment and can thus accurately follow up to obtain an unbiased outcome.

STANDARDS OF CONDUCT DIRECTIVE MODIFIED BY DEPARTMENT OF DEFENSE

Limitations on Department of Defense personnel accepting "any favor, gratuity, or entertainment" have been defined more precisely by a modification of the Department's directive on "Standards of Conduct."

The Previously effective paragraph on the subject, in Department of Defense Directive Number 5500.7 dated May 17, 1963, reads as follows:

"DoD personnel will not accept any favor, gratuity, or entertainment directly or indirectly, from any person, firm, corporation, or other entity which has engaged, is engaged, or is endeavoring to engage in procurement activities or business transactions of any sort with any agency of the DoD, *where such favor, gratuity, or entertainment might affect, or might reasonably be interpreted as affecting, or give the appearance of affecting the objectivity and impartiality of such personnel in servicing the Government.*"

Experience over the past year has indicated that the discretionary language (italicized in the paragraph above) used in this section of the directive has been variously interpreted by Defense personnel and in some cases has resulted in action considered inconsistent with the spirit and intent of the directive. This section of the directive has been modified to read as follows: "VI. *Gratuities*

A. DoD personnel will not accept any favor, gratuity or entertainment directly or indirectly, from any person, firm, corporation, or any other entity which has engaged, is engaged, or is endeavoring to engage in procurement activities or business transactions of any sort with any agency of the DoD except as provided in Paragraphs 1, 2 and 3 of this section. Favors, gratuities, or entertainment bestowed upon members of the immediate families of DoD personnel are viewed in the same light as those bestowed upon DoD personnel. Acceptance of entertainment, gifts, or favors (no matter how innocently tendered or received) from those who have or seek business dealings with the Department of Defense may be a source of embarrassment to the Department and to the personnel involved, may affect the objective judgment of the recipient and impair public confidence in the integrity of business relations between the Department and industry.

1. In some circumstances the interests of the Government may be served by participation of Defense personnel in widely attended lunches, dinners and similar gatherings sponsored by industrial, technical and professional associations for the discussion of matters of mutual interest to Government and industry. Participation by Defense personnel is appropriate where the host is the association and not an individual contractor. However, acceptance of entertainment or hospitality from private companies in connection with such association activities is prohibited.

2. In some circumstances the interests of the Government may be served by participation of Defense personnel in activities at the expense of individual Defense contractors. These activities include public ceremonies of mutual interest to industry, local communities and the Department of Defense, such as the launching of ships or the unveiling of new weapons systems; industrial activities which are sponsored by or encouraged by the United States Government as a matter of United States defense or economic policy, such as sales meetings to promote off-shore sales involving foreign industrial groups or governments; and luncheons or dinners at a contractor's plant, on an infrequent basis, where the conduct of official business within the plant will be facilitated and where no provision can be made for individual payment.

3. There may be a limited number of additional situations where, in the judgment of the individual concerned, the Government's interest would be served by participation by Department of Defense personnel in activities comparable to those enumerated above. In any such cases in which Department of Defense personnel accept any favor, gratuity or entertainment directly or indirectly from any person, firm, corporation, or other entity which is engaged in business transactions of any sort with the Department of Defense, a report of the circumstances will be made within forty-eight

hours to the designee of the Secretary of the military department concerned, or to the designee of the Secretary of Defense in the case of Department of Defense personnel not within one of the military departments.

The amendment, signed by Deputy Secretary Cyrus R. Vance on September 25, 1964, will be included in

the reissue of the Directive. All other sections of the basic directive remain the same.

(Copies of the reissue of DoD Directive 5500.7, updated to September 25, 1964, are now available at Defense News Branch, Room 2 E 757a, Pentagon.)

SLIDE SETS AVAILABLE

The following slide sets are available on a two-week loan basis from the Medical Illustration Service, Armed Forces Institute of Pathology:

- L-2726 Comparative Study of Four Cases of Total Body Radiation, consisting of 46 lantern slides, with 25 sets available for loan.
- L-6364 Lesions of the Uterine Cervix, consisting of 95 lantern slides, with 25 sets available for loan.
- L-11063 The Pathology of Metazoan Parasitic Diseases of Man and Animals, consisting of 224 lantern slides, with 25 sets available for loan.

IRON DEFICIENCY IN INFANCY

An analysis by the Chicago Board of Health revealed that 72 percent of deaths in that city among infants 7 days to 1 year of age during 1961 occurred in the lowest socioeconomic area. Here the infant mortality rate was 50 percent higher than the city average; also, 92 percent of these deaths resulted from acute infections. Because dietary deficiency of mothers during pregnancy and infants during the first year of life was considered a possible factor, the board of health has undertaken a controlled study of the possible effect of feeding infants a prepared formula containing 12 mg of iron per quart. In the study, scheduled for completion in 1964, 1,000 infants are to be followed for 18 months each.—Public Health Reports 79(5): 392, May 1964.

BUFFALO WITH BRUCELLOSIS

Reporting that there are approximately 12,000 buffalo on about 400 separate ranges in the United States, the U.S. Department of Agriculture proposed controls on interstate movement of the animals to check the spread of brucellosis. Many small buffalo herds, the Department said, contain infected animals that could spread brucellosis to cattle.—Public Health Reports 78(12): 1060, December 1963.

HEALTH OF 3 OUT OF 4 INSURED

More than 141 million Americans, 3 of every 4 of the civilian population, had some form of health insurance protection through voluntary insuring organizations in 1962. The "Source Book of Health Insurance Data, 1963," published by the Health Insurance Institute, 488 Madison Ave., New York, N.Y., describes this as an increase of nearly 5 million persons with health insurance over the previous record high of 1961.—Public Health Reports 79(5): 392, May 1964.

It was recently estimated that throughout the world hookworms still cause a daily blood loss equivalent to the total exsanguination of about 1.5 million people.—WHO Chronicle 18(10): 369, October 1964.

The investigation of an epidemic of yellow fever that caused 15,000 deaths in Ethiopia between 1960 and 1962 has revealed two main routes of entry of the virus into a country hitherto free from disease.—WHO Chronicle 18(10): 390, October 1964.

Anticancer drugs were until recently reserved for the treatment of leukaemias, haemosarcomas and certain rare tumours, such as choriocarcinomas, seminomas, and myelomas. In the last two years they have been applied with some modest success in the treatment of far more common tumours, such as those of the gastro-intestinal tract, the lung, and the cervix uteri.—WHO Chronicle 18(10): 393, October 1964.

SEAT BELTS FOR SCHOOL BUS DRIVERS

Orchard View Community Schools in Muskegon Township, Mich., have installed seat belts for drivers on each of the district's 17 school buses.—Public Health Reports 79(10): 924, October 1964.

TB CASEFINDING

In southeastern Michigan, 275 active cases of tuberculosis were discovered in tuberculin tests of 800,000 school children from September 1957 to December 1962. About 1.7 percent of the children were reactors. In 33,745 contacts of the reactors, an additional 116 new cases were found through X-ray.—Public Health Reports 79(10): 924, October 1964.

CANCER IN THE YOUNG

Cancer, for some time the leading fatal disease in the age group 1-14 years, is now responsible for more than one-fifth of all deaths from disease in that age group.—Public Health Reports 79(10): 924, October 1964.

U.S. GOVERNMENT GIFTS TO WHO

The U.S. Government has made three further gifts to WHO totalling \$1,350,000. The largest single amount, \$1,000,000, goes to the WHO Malaria Eradication Special Account, and contributions of \$200,000 and \$150,000 are made respectively to the Special Account for Community Water Supply and the Special Account for Medical Research.

Through WHO's world-wide malaria eradication campaign large areas have already been freed from the disease and the programme is now going forward in 85 countries with a total population of more than 740,000,000. With the latest gift, the total of U.S. contributions to the WHO malaria campaign reaches \$17,500,000.

The U.S. gift to medical research brings the total of its contributions to this part of WHO's work to \$2,300,000. The medical research programme comprises more than 350 projects in such fields as cancer, heart disease, human genetics, and the effects of pesticides on man. U.S. contributions to the WHO Special Account for Community Water Supply now total \$975,000.—WHO Chronicle 18(3): 103, March 1964.

CASEFINDING BY CYTOLOGY

Forty-six positive cytology specimens were uncovered in 1963 among 9,275 women examined in the general hospital cytology program of the New York State Department of Health. Additional funds have been allotted to support hospitals carrying out this program in 1964.

Ten of the definite cancers were diagnosed as carcinoma in situ, indicating that at least one-third of the cases detected had been unsuspected by patient and physician.

The Pennsylvania Department of Health, aided by a \$120,000 Public Health Service grant for a 3-year program, plans demonstrations in all health regions of the State to show dentists and physicians how to uncover mouth cancers in the early stage. The tools will be a glass slide and a wood scraper.

Cancer of the oral cavity and pharynx was responsible for 419 deaths in 1963 in Pennsylvania.—Public Health Reports 79(10): 924, October 1964.

N. J. AID FOR MIGRANTS

The New Jersey State Department of Health, with funds available from the Public Health Service, has contracted to pay the National Travelers Aid Association \$11,000 for the period May 1, 1964 to May 1, 1965 to add services designed to protect the health of migrant agricultural workers in New Jersey and after they leave the state.

The association has agreed to provide a caseworker and a mobile unit for visiting labor camps, hospitals, and other locations; to assure continuity of planning for the migrant workers throughout the country, through use of the association's offices; and to encourage effective relationships among all groups serving the migrant and his family.—Public Health Reports 79(10): 924, October 1964.

PROJECT FOR MENTALLY RETARDED

In a project of the Hawaii Department of Health's mental retardation division, former residents of an institution for the mentally retarded meet once a week for 1½ hours with Dr. Setsu Furuno, the chief psychologist. They learn about community facilities, ventilate feelings of isolation and loneliness, and discuss their problems and satisfactions in relations with their employers and families.

Dr. Furuno has arranged for a special YWCA class in sewing for the women discharges in the hope that "they will seek out other recreational and skill programs on their own."—Public Health Reports 79(10): 924, October 1964.

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